



"APPARATUS, CONTAINER AND METHOD FOR PRODUCING  
AND CONSUMING SOLUBLE DRINKS"

TECHNICAL FIELD

The invention refers to an apparatus, container  
5 and method for producing and consuming soluble  
drinks.

BACKGROUND ART.

For some time now, the use has been known of  
automatic machines able to prepare and dispense  
10 soluble drinks.

These machines comprise a solvent-liquid tank,  
generally water, which is heated and which, at  
command, is sent, by means of a pump and through a  
conveyor pipe, towards an area in which a number  
15 of capsules are placed containing doses of soluble  
substances in the form of powder which, mixed with  
the water, become consumable drinks.

The capsules are permeable to water and the mixing  
with the soluble substances occurs inside them  
20 during the transit of this.

The machines are equipped with a dispensing device  
underneath which an area is contemplated where the  
cups, or other containers, normally disposable,  
are placed to receive and contain the dispensed  
25 drinks and from which to drink them.

A capsule for containing soluble drinks is known  
by patent WO 2005/092160.

According to this patent, the capsule is made up  
of a lower cup portion forming a base with a  
dispensing mouth, and of an upper closing portion  
30 forming an inlet mouth for the solvent liquid.

Between the lower portion and the upper portion a  
containment chamber is defined in which is placed  
a dose of a soluble substance in the form of

powder which is mixed with hot water under pressure and transformed by this into a drink that is then collected in an underliving cup.

A further capsule for containing soluble drinks is  
5 known by patent WO 2005/018395.

According to this patent, a capsule is contemplated which comprises a container body in which two superimposed chambers are defined.

The container body has an upper opening that is  
10 normally closed with a perforable diaphragm and an inner edge that delimits the two chambers and on which is fixed a second perforable diaphragm.

Between the two diaphragms a dose of soluble substance is contained, while, below the second  
15 diaphragm, the second chamber is formed which is provided, at the lower extremity, with a dispensing mouth.

The water under pressure is introduced into the first upper chamber by means of an injector unit  
20 of a dispenser machine, which perforates the first diaphragm and dispenses water under pressure.

Inside the first chamber, the pressure increases gradually and the second diaphragm is pushed onto the tips of the filtering element until this is  
25 perforated by these.

The dissolved drink flows through the filtering element and is then collected inside the second lower chamber and, from this, is dispensed outside through the dispensing mouth, which is formed of a  
30 series of openings such as to control the speed of drink dispensing.

A further capsule for containing soluble substances is known by patent WO 2004/087529 A1.

According to this patent, the capsule comprises a truncated-cone shaped body with an upper opening that is closed by means of a first sheet of plastic or aluminium material and which has a bottom wall with a section that re-enters the body.

Between the first sheet and the bottom wall, a first containment chamber is defined containing a dose of soluble substance.

10 This bottom wall forms a lower edge that delimits an opening with a width substantially the same as that of the body and which is also closed with a second sheet of plastic or aluminium material.

Between the bottom wall and the second sheet, a second chamber is defined underneath the first chamber.

The capsule is intended to be used in an automatic machine having an injection apparatus for injecting water under pressure.

20 This apparatus comprises an injector that perforates the first sheet, introduces water under pressure into the first chamber and then also perforates the second sheet.

The soluble substance dissolves inside the first chamber and collects in the second lower chamber, flowing through the holes obtained in the bottom wall and is therefore dispensed through the hole obtained in the second sheet.

Another capsule for containing soluble substances is known by the patent WO 2005/080223.

According to this patent, the capsule has a container body defining, inside, a containment chamber for containing a dose of soluble substance.

The container body has an upper opening that is sealed with a sheet of perforable material and a bottom defining a central area delimited by a predefined fracture line.

5 The capsule is used in drink dispenser machines having an injector unit that injects water under pressure into the containment chamber, after perforating the sheet of perforable material, and a pressing unit designed to push on the central  
10 area so this fractures and returns inside the chamber, leaving the central area open so that, through this, the drink can flow out.

The pressing unit has a part in contact with the central area and which has a predetermined  
15 section, so that, it too penetrating inside the chamber to a small extent, a passage of desired and variable dimensions for the drink is defined between it and the edges of the opening defined by the removal of the central area.

20 A further capsule for containing soluble substances to make drinks is known by US patent 2006/0236871.

According to this patent, the capsule comprises a container body for containing a dose of soluble  
25 substance.

The container body is shaped like a glass and has the upper extremity opened which is sealed with a sheet of perforable material and the lower extremity that can be completely closed or open in  
30 the centre, but sealed with a lower diaphragm of perforable material; between the upper extremity and the lower extremity is defined a containment chamber for containing a dose of soluble substance.

The capsule is made to be fitted in a seat of an automatic dispenser machine, which has an upper injector of water under pressure which, after perforating the sheet of perforable material that closes the upper extremity, positions inside the upper recess without tearing it and introduces water inside the containment chamber to dissolve the soluble substance through the openings obtained in the upper selector element.

10 The dispenser machine also has a lower hollow tip which, when the pressure inside the containment chamber increases and the lower extremity of the glass-shaped body bends outwards, is designed to perforate this lower extremity or, in a further version of the capsule, to perforate the lower diaphragm, positioning in the corresponding recess, without tearing it.

15 The dissolved drink flows through the openings obtained in the lower selector element and is dispensed outwards through an axial cavity on the lower tip.

A further embodiment of a pod for containing soluble substances is known by the patent WO 92/07775.

25 According to this patent, a pod is contemplated with a container body for containing a dose of a soluble substance.

The container body has a truncated-cone shape and is closed at the upper larger base by a convex wall outwards.

30 Similarly, the bottom of the container body is shaped like the upper convex wall and protrudes inside a containment chamber defined in the container body.

The latter has, substantially in a median area, a porous transversal diaphragm which is fixed around the perimeter of the inner wall of the container body.

- 5 The upper convex part has, centrally, a weakened area ready to be perforated by a perforating part fitted to a corresponding drink dispenser machine and which consists of an axially hollow needle which has gaps for dispensing water under pressure  
10 which are positioned so as to direct water jets onto the inner face of the upper wall that then spring off this towards all the areas of the containment chamber, so that the water can be distributed in a substantially uniform way in all  
15 these areas.

The dispenser machine, besides the perforating part as previously mentioned, also has a receptacle inside which the capsule must be placed in order to be used.

- 20 This receptacle comprises a second container body that is open at the top and which has a substantially truncated-cone shape like the body of the capsule, but slightly bigger so as to be able to contain it inside.

- 25 In turn, this second container body is housed in a collector device of the dispenser machine designed to collect the formed drink and convey this outside.

- The bottom of this second container body has a  
30 series of perforators turned towards the bottom of the container body, which has a lower thickness than the walls, so that it can be easily perforated.

When the injector of the dispenser machine injects water under pressure inside the containment chamber, after perforating the upper wall, the pressure inside this chamber increases and the  
5 bottom wall bends outwards, entering into contact with the perforators of the second container body. These perforators are axially hollow and, when they penetrate inside the containment chamber where, after the injection of water the liquid mix  
10 has formed that produces a drink, they allow this mix to flow and this is dispensed outside after passing through a filter located in the collector device.

Another capsule for containing soluble substances to make ready drinks is known by the patent WO  
15 2006/045536.

According to this patent, the capsule comprises a container body inside which is defined a containment chamber of a dose of soluble  
20 substance.

This container body has a perforable extremity and an opposite base extremity that is open, but which is sealed with a sheet of perforable material after the capsule has been filled with the soluble  
25 substance.

The dispenser machine that uses this capsule has a supporting element for supporting the base extremity of the capsule, or, more specifically, of the sheet of perforable material that is  
30 normally kept bent outwards, by injecting a small volume of suitable gas.

The supporting element has a plurality of perforator elements designed to perforate the sheet when the drink is required to be dispensed.



The dispenser machine also comprises a bell-shaped body which is designed to couple up with the supporting element, superimposing itself on the capsule and which has, at the top of the inner wall, a perforator/injector linked with a dispensing channel of water under pressure and which is designed to inject water under pressure inside the containment chamber after perforating the perforable extremity.

When the dispensing is required of a drink inside the capsule, this is placed above the supporting element with the bell-shaped body in a position away from this to allow the positioning of the capsule.

Afterwards, a mechanism moves the bell-shaped body closer to the base element and the perforator/injector penetrates inside the containment chamber, injecting water under pressure into this.

Inside the containment chamber, the pressure gradually increases and the sheet of perforable material bends towards the perforator elements which perforate it.

Among the perforator elements drink collection channels are defined that convey the drink towards a dispensing mouth towards the outside.

This state of the art has a series of drawbacks.

A first drawback is that to be able to dispense and consume a soluble drink a high number of components must be available that must be eliminated after use, such as, e.g., a container, an empty capsule inside which the wet powdered dose remains that generated the drink, a pack enclosing each capsule in a sealed way before this

is used, the box containing the various capsule packs, the box containing the containers for the dispensed drinks.

Another drawback is that the dispenser machines  
5 must have a specific mechanism that captures the capsules to move them to the position of use and a duct and a tank for conveying and collecting the used capsules.

A further drawback is that unless the collection  
10 tank and the conveyor duct are repeatedly emptied, the dispenser machine stops, interrupting the production and the dispensing of drinks.

Another drawback is that known dispenser machines must have high overall dimensions, due to the  
15 necessary presence of the tank for collecting the used capsules and for this reason they cannot be placed on desks in the event of wanting to make personal use of them.

A further drawback is that one type of drink,  
20 e.g., coffee, contained in a capsule, pollutes the contents of a capsule containing a different type of drink, e.g., tea, and which is used afterwards.

#### OBJECTS OF THE INVENTION.

One object of the invention is to upgrade the  
25 state of the art.

Another object of the invention is to realise an apparatus, container and method for producing and consuming soluble drinks that makes the machines for preparing and dispensing soluble drinks more  
30 simple and compact.

A further object of the invention is to realise an apparatus, container and method for producing and consuming soluble drinks that allows avoiding any pollution between different drinks.

Another object of the invention is to realise an apparatus, container and method for producing and consuming soluble drinks that permits considerably reducing the components to be disposed of after use, thus considerably cutting the production costs of soluble drinks.

A further object of the invention is to develop an apparatus, container and method which allow making machines for the production and the dispensing of soluble drinks of compact dimensions, such as to allow these to also be placed in small areas, such as, for example, a corner of a desk, and to also be used in a personal way by an individual user.

According to one aspect of the invention, an apparatus for producing and consuming soluble drinks is provided comprising: a dispensing device for dispensing a solvent liquid for dissolving doses of powdered soluble drinks; a container of said doses of soluble drinks to be dissolved, characterised by the fact that said container comprises connection means with said dispensing device and collection means for collecting a dissolved drink accessible from outside, in such a way as to consume said dissolved drink directly from said container.

According to a further aspect of the invention, a container for producing and consuming soluble drinks is provided characterized by the fact that it comprises: a containment body; a first containment compartment of at least one dose of soluble drinks to be dissolved defined in said body; an inlet obtained in said first containment compartment for the introduction of a solvent liquid dispensed by a dispensing device; a second

collection compartment of a dissolved drink, open and accessible from the outside, defined in said body separately from said first compartment and connectable to this by connection means, said  
5 second compartment allowing a user to drink said dissolved drink directly from said container.

According to another aspect of the invention, a method for producing and consuming soluble drinks is provided, comprising the following phases:

10 arranging in a first compartment of a container a dose of powdered soluble drink; introducing into said first compartment a solvent liquid in such a way as to dissolve inside this said dose and obtain a dissolved drink ready to drink;  
15 dispensing said dissolved drink; characterized by the fact that after said dispensing the collection is envisaged of said dissolved and dispensed drink in a second compartment of said container, separated from said first compartment and  
20 accessible from the outside, in such a way as to be able to drink said dissolved drink directly from said second compartment.

The apparatus, the container and the method for producing and consuming soluble drinks thus permit  
25 preparing and dispensing soluble drinks which are collected directly in the same container containing the doses of powdered soluble drinks to be dissolved and from which the dissolved drinks can be drunk directly.

#### 30 BRIEF DESCRIPTION OF THE DRAWINGS

Further characteristics and advantages will appear more evident from the description of an embodiment of an apparatus and a container for producing and consuming soluble drinks, illustrated indicatively

by way of non limiting example in the accompanying drawings, wherein:

Figure 1 is a very schematic and cross section view of an apparatus for producing and consuming  
5 soluble drinks;

Figure 2 is a very schematic cross section and interrupted view of a second embodiment of an apparatus for producing and consuming soluble drinks;

10 Figure 3 is a very schematic cross section and interrupted view of a third embodiment of an apparatus for producing and consuming soluble drinks;

Figure 4 is a cross section interrupted view of a  
15 detail of the apparatus of Figure 1;

Figure 5 is a cross section interrupted view of a second embodiment of the detail of the apparatus of Figure 1;

Figure 6A is a perspective view of a container of  
20 doses of soluble drinks with small dimensions and from which a dissolved drink can also be drunk;

Figure 6B is a perspective view of a container of doses of soluble drinks with bigger dimensions and from which a dissolved drink can also be drunk.

25 EMBODIMENTS OF THE INVENTION.

With special reference to the Figure 1, a first embodiment is shown of an apparatus for producing and consuming soluble drinks, indicated by 1 and hereinafter briefly indicated as apparatus 1.

30 The apparatus 1 comprises a dispensing device 2 for dispensing a solvent liquid, normally water, which is mounted on an automatic dispenser machine "M" for dissolving doses 3 of powdered soluble drinks previously arranged inside a container 4.

The container 4 is formed of two shells, respectively a first outer shell 5 and a second inner shell 6 that can be positioned inside the first outer shell 5.

5 Both the first outer shell 5, and the second inner shell 6 are preformed, in such a way as to form a first compartment 7 and a second compartment 8 respectively.

Furthermore, as can be seen in the Figure 1,  
10 between the side walls of the first outer shell 5 and the second inner shell 6 an inter-space 9 is defined that forms connection means for connecting the first compartment 7 to the dispensing device 2, described in detail below.

15 The second inner shell 6 forms, in a substantially central area, a path that places in mutual communication the first compartment 7 and the second compartment 8 and which, in this embodiment of the apparatus 1, is made like a duct element 10  
20 that elevates from a bottom wall 11 of the second compartment 8.

The duct element 10 has a longitudinal cavity 12 and defines a first extremity 13 turned towards the inside of said second compartment 8 which has  
25 an outlet opening 14 and an opposite second open extremity 15 turned towards the first compartment 7 and communicating with this.

Inside the duct element 10 a filter 16 is fitted that is designed to filter the dissolved drinks  
30 during their transit along the longitudinal cavity 12 to be collected inside the second compartment 8.

The connection means connecting the first compartment 7 with the dispensing device 2

comprise a duct defined in the inter-space 9 and indicated by 17 which is obtained in a handle 18 which is part of the container 4, and a coupling part 19 meant to be coupled with the dispensing device 2, as described below, which has a coupling opening 20 normally seal-closed with laminar perforable means, such as, e.g., a sheet of aluminium.

In the handle 18, the coupling element 19 forms an overturned hollow seat 21 meant to receive inside it perforating means 22 for perforating the previously described aluminium sheet, when the container 4 is coupled with the dispensing device 2 in a dispensing configuration of solvent liquid, in this specific case hot water under pressure.

For this reason, the hollow seat 21 is shaped in such a way as to couple with the perforating means 22 and guide them during coupling.

The perforating means 22 comprise a stem member 23 which axially has a cavity 24 and which is connected to a pump 25 comprised in the dispensing device 2; the pump 25 is in turn connected to a tank 26 meant to contain a reserve of water to be heated, e.g., by means of a heating element 27 fitted inside the tank 26, and to be sent on request to the container 4 to dissolve a dose 3 of soluble drink.

The stem member 23 defines a first perforation extremity 28 meant to perforate said laminar perforable means and having a dispensing opening 29, and an opposite extremity 30 that is connected to the pump 25.

On the stem member 23 is fitted, sliding along this, a cursor 31, which moves along the stem

member 23 pushed at an extremity by the coupling element 19, the position of which can vary according to the dimensions or to the capacity of the container 4, when the latter is coupled with the dispensing device 2 and at the opposite extremity by elastic contrast means, such as, for example, a spring 31A.

On the cursor 31 are fitted starting and stopping means 32 for starting and stopping the pump 25.

These starting and stopping means 32 can comprise, e.g., a microswitch 33 which can be operated with an eccentric body 34 fitted on the cursor 31, more specifically on an outer surface 31B of this, in such a way that the sliding movements along the stem member 23 start or stop the pump 25.

Inside the handle 18 an elastic shutter 35 is also fitted meant to be pressed by the stem member 23 when the container 4 is coupled with the dispensing device 2 and, instead, to stretch itself and occupy the coupling opening 20, when the container 4 is separated from the dispensing device 2: this way dripping is prevented through this coupling opening 20 when the extremity 28 is extracted.

In this first embodiment of the apparatus 1, the container 4 has a substantially round shape and is shaped like a cup which, as previously said, can be of different dimensions according to the type of drink it contains; the first compartment 7 and the second compartment 8 are, therefore, superimposed on one another as can be seen in the Figure 1.



The duct element 10 has, at the first extremity 13, the outlet opening 14 which can have different embodiments.

In a first embodiment it is envisaged that the opening 14 be obtained directly at the first extremity 13 like a simple hole.

In a second embodiment shown in the Figure 4, the opening 14 substantially occupies all the first extremity 13 and inside the duct element 10 a sliding cap 36 is arranged which has a head 37 which peripherally has an elastic edge 38 which, normally, is kept in forced-seal position against the inner walls of the outlet opening 14.

When the sliding cap 36 moves outwards, pushed by the pressure indicated by the arrows "P" produced by the dissolved drink which rises through the longitudinal cavity 12 due to the gradual increase in pressure generated inside the first compartment 7, determined by the introduction of hot water under pressure, the elastic edge 38 moves beyond the edge of the outlet opening 14 and enlarges outwards, creating an annular passage 39 through which the dissolved drink comes out to be collected inside the second compartment 8.

In a third embodiment shown in the Figure 5, it will be seen that the first extremity 13 of the stem member 10 shapes an annular edge 40 in relief outwards.

On the first extremity 13 a cover 41 is fitted that shapes, in substantial correspondence to its base, a series of parallel ribs 44 which between them define passages with profiles that form a further edge 42 in relief towards the inside,

which has a profile joined with that of the edge 40.

The relief edge 42 is obtained at a distance from an upper wall 43 of the cap 41 such as to allow  
5 the free sliding of the latter for a section "T" along the stem member 10, before the edges 40 and 42 come into contact with each other.

In cross section, both the edges 40 and 42 show rounded borders, so as to facilitate the start of  
10 overriding of the edge 42 over the edge 40.

The sliding of the cap 41, in this case too, is caused by the pressure "P" produced by the dissolved drink which rises through the longitudinal cavity 12.

15 When the edge 42 starts to override the edge 40 due to the pressure thrust on the cap 41, it dilates slightly outwards and the dissolved drink can flow through the passages defined between the ribs 44, and be collected in the second  
20 compartment 8, ready to be drunk.

With reference to the Figures 2 and 3 two further embodiments will be seen of the container 4, indicated by the numbers 50 and 60 respectively.

In particular, in the version shown in the Figure  
25 2, it will be seen that a first compartment 51 and a second compartment 52 are arranged side by side and defined in a first shell 53 and in a second shell 54 respectively.

In this second embodiment as well, between the  
30 first shell 53 and the second shell 54 an inter-space 55 is defined that communicates with the inside of the second compartment 52 through openings 56 upstream of which, filters 57 are fitted.

Inside the first compartment 51 a dose 58 is placed of a powdered drink and a duct 59 connects it to the dispensing device 2.

With particular reference to the Figure 3, it will be seen that the container 60 is substantially similar to the container 4 in its first embodiment.

In fact, the container 60 is again composed of an outer shell 61 and of an inner shell 62 which shape a first compartment 63 and a second compartment 64 respectively.

Between the outer shell 61 and the inner shell 62 is again defined an inter-space 65 and a duct 66 connecting the first compartment 63 to the dispensing device 2.

In the inner shell 62 an outlet opening 67 of the dissolved drinks is provided connecting the first compartment 63 to the second compartment 65 through the inter-space 65 and which is protected by a filter 68 located upstream.

The operation of the apparatus 1 for producing and consuming soluble drinks is the following: with reference to the first embodiment shown in Figure 1, when a container 4 is coupled with the dispensing device 2, the coupling element 19 rests and pushes against the cursor 31 which is forced to slide along the stem member 23 downwards, defeating the contrasting force of the spring 31A. The eccentric body 34 triggers the micro-switch 33 and the pump 25 starts to pump up hot water from the tank 26, conveying it to the container 4 through the longitudinal cavity 24 of the stem member 23 which, during the positioning of the container 4, i.e., more specifically, of the

insertion of the hollow seat 21 of this on the perforating means 22, perforates with its own first extremity 28 the aluminium sheet that seal-closes the coupling opening 20.

5 At the same time, the perforation extremity 28 presses on the elastic shutter 35 keeping this raised off the coupling opening 20 and placing in communication the cavity 24 with the duct 17 and, therefore, with the first compartment 7.

10 The hot water under pressure is then pushed inside this where a dose 3 of a soluble powdered drink has been previously placed.

The hot water dissolves the powdered drink making it completely liquid and the pressure pushes it up  
15 along the duct element 10 until it reaches the outlet opening 14, filtered by the filter 16.

In the event of the opening 14 being made like a simple hole, the drink flows out of this according to the arrows "F" and collects inside the second  
20 compartment 8, ready to be drunk.

In the event of the outlet opening 14 being made as shown in the Figure 4, the pressure "P" of the dissolved drink rising along the duct element 10 pushes on the head 37 of the sliding cap 36 which  
25 lifts up until the elastic edge 38 goes beyond the surround of the outlet opening 14, opening up towards the outside and creating the annular passage 39, through which passes the dissolved drink in liquid state which is collected in the  
30 second compartment 8.

In the event of the outlet opening 14 being made as shown in the Figure 5, the pressure "P" of the dissolved drink pushes on the cap 43 moving it by

the distance "T", so the edges 40 and 42 come into contact with each other.

As the thrust continues, the edge 42 tends to go beyond the edge 40, but to do this, the cap 41 must dilate slightly towards the outside and this dilation is enough to allow the passage of the dissolved drink between the ribs 44 and, therefore, for it to reach the outlet opening 14 and, from here, the second compartment 8 in which it is collected.

When the quantity of dissolved drink collected inside this reaches a value selected by the consumer, the operation of the pump 25 is interrupted; the spring 31A returns the cursor 31 upwards until the stem member 23 is completely covered.

The quantity of dissolved drink can be determined in various ways, such as, e.g., by means of a timer, or of a volume or weight detection device designed to detect the quantity of drinks collected inside the second compartment 8, or again automatically, by fitting onto the cursor 31 a microswitch 33 that couples with an eccentric body having several coupling positions, to each of which corresponds a pre-established volume of dispensable water, or again by simply separating the container 4 from the dispensing device 2.

The perforation extremity 28 is covered by the cursor 31 and the connection opening 20, no longer crossed by the perforation extremity 28, is closed by the elastic shutter 35 to prevent dripping.

The consumer can grip the handle 18 and pick up the container 4, separating it from the dispensing

device 2, and drink the drink collected in the second compartment 8 directly from this.

Once the drink has been completely consumed, the container 4 is thrown away together with the empty  
5 dose of powdered drink still inside the first compartment 7.

The operation of the apparatus 1 is also the same in the embodiments shown in the Figures 2 and 3.

With reference to the Figure 2, the hot water  
10 under pressure reaches the first compartment 51 passing through the duct 59 and coming from the dispensing device 2 which remains unchanged with respect to what has been previously described.

Inside this first compartment 51, the dissolving  
15 occurs of the drink, which, due to the pressure "P", penetrates the inter-space 55 and reaches the outlet openings 56, after being filtered by the filters 57, and is then stored in the second compartment 52.

20 The user grips the container 50 and, after separating it from the dispensing device 2, can drink the drink directly from the container 50.

With reference to the Figure 3, the hot water under pressure coming from the pump (not shown)  
25 reaches the first compartment 63 of the container 60, passing through the duct 66.

When the dose of the drink contained in the first compartment 63 has completely dissolved, it is pushed towards the outlet opening 67, after being  
30 filtered by the filter 68, and after this is collected in the second compartment 64.

The user grips the container 60, separating it from the dispensing device 2, and can therefore drink directly from this.

## CLAIMS

- 1) Apparatus for producing and consuming soluble drinks comprising: a dispensing device (2) for dispensing a solvent liquid for dissolving doses (3, 58) of powdered soluble drinks; a container (4; 50; 60) for said doses of soluble drinks to be dissolved, characterised by the fact that said container (4; 50; 60) comprises connection means (19, 20, 21, 22) with said dispensing device (2) and collection means (8; 52; 64) for collecting a dissolved drink accessible from outside, in such a way as to consume said dissolved drink directly from said container (4; 50; 60).
- 2) Apparatus according to claim 1, wherein said container (4; 50; 60) comprises: a first compartment (7; 51; 63) for containing and dissolving said doses (3; 58) connectable to said dispensing device (2) with said connection means (19, 20, 21, 22); a second compartment (8; 52; 64) for collecting dissolved drinks substantially separated from said first compartment (7; 51; 63) accessible from outside; a connection path (9; 55; 65) between said first compartment (7; 51; 63) and said second compartment (8; 52; 64).
- 3) Apparatus according to claim 2, wherein said connection path (9; 55; 65) is of the type of single transit direction, from said first compartment (7; 51; 63) towards said second compartment (8; 52; 64).
- 4) Apparatus according to claim 2, wherein said connection path (9; 55; 65) has filtering means (16; 57; 68) to filter said dissolved drinks between said first compartment (7; 51; 53) and said second compartment (8; 52; 64).
- 5) Apparatus according to claim 1 or 2, wherein said container (4; 50; 60) comprises: a first outer shell (5; 53; 61) that shapes said first compartment (7; 51; 63)

and a second inner shell (6; 54; 62) that shapes said second compartment (8; 52; 64), that can be arranged inside said first outer shell (5; 53; 61), between said first compartment (7; 51; 63) and said second compartment (8; 52; 64) said connection means being defined (10; 14; 39; 56; 67).

6) Apparatus according to claim 5, wherein said first compartment (7; 51; 63) and second compartment (8; 52; 64) are substantially superimposed on one another.

7) Apparatus according to claim 5, wherein said first compartment (7; 51; 63) and second compartment (8; 52; 64) are substantially arranged side by side.

8) Apparatus according to claim 2 or 6, wherein said connection path comprises a duct element (10) elevating from a bottom wall (11) of said second compartment (8), having a longitudinal cavity (12) and defining a first extremity (13) turned towards the inside of said second compartment (8) which has an outlet opening (14) and an opposite second open extremity (15) turned towards said first compartment (7).

9) Apparatus according to claim 2 or 7, wherein said connection path comprises an inter-space (9; 55; 65) defined between said first compartment (7; 51; 63) and second compartment (8; 52; 64) and having outlet openings (14; 39; 56; 67) towards the inside of said second compartment (8; 52; 64).

10) Apparatus according to claim 5, wherein said first shell and second shell comprise a first preformed shell (5; 53; 61) and a second preformed shell (6; 54; 62) joined together with joining means.

11) Apparatus according to claim 5, wherein said connection means comprise: a connection duct (17; 59; 66) defined between said first shell (5; 53; 61) and second shell (6; 54; 62), having an extremity communicating with said



first compartment (7; 51; 63) and an opposite extremity; a coupling element (19) with said dispensing device (2), arranged at said opposite extremity and having a coupling opening (20) normally seal-closed with laminar perforable means.

12) Apparatus according to claim 11, wherein said dispensing device (2) comprises: tank means (26) for containing said solvent liquid; pumping means (25) for pumping said solvent liquid from said tank means (26) towards said container (4; 50; 60); perforating means (22) of said laminar perforable means in a dispensing coupling configuration between said connection means (17; 59; 66) and said dispensing device (2).

13) Apparatus according to claim 11 or 12, wherein said perforating means comprise: an axially hollow stem member (23), said stem member (23) defining a perforation extremity (28) meant to perforate said laminar perforable means and having a dispensing opening (29) and an opposite extremity connected to said pumping means (25); a cursor element (31), fitted sliding on this and moveable by contact with said coupling element (19); starting or stopping means (32, 33, 34) of said pumping means (25).

14) Apparatus according to claim 13, wherein said starting or stopping means (32, 33, 34) can be operated by sliding said protection element (31) along said stem member (23).

15) Container for producing and consuming soluble drinks characterized by the fact that it comprises: a containment body (4; 50; 60); a first containment compartment (7; 51; 63) of at least one dose (3; 58) of soluble drinks to be dissolved defined in said containment body (4; 50; 60); an inlet (17; 59; 66) obtained in said first containment compartment (7; 51;

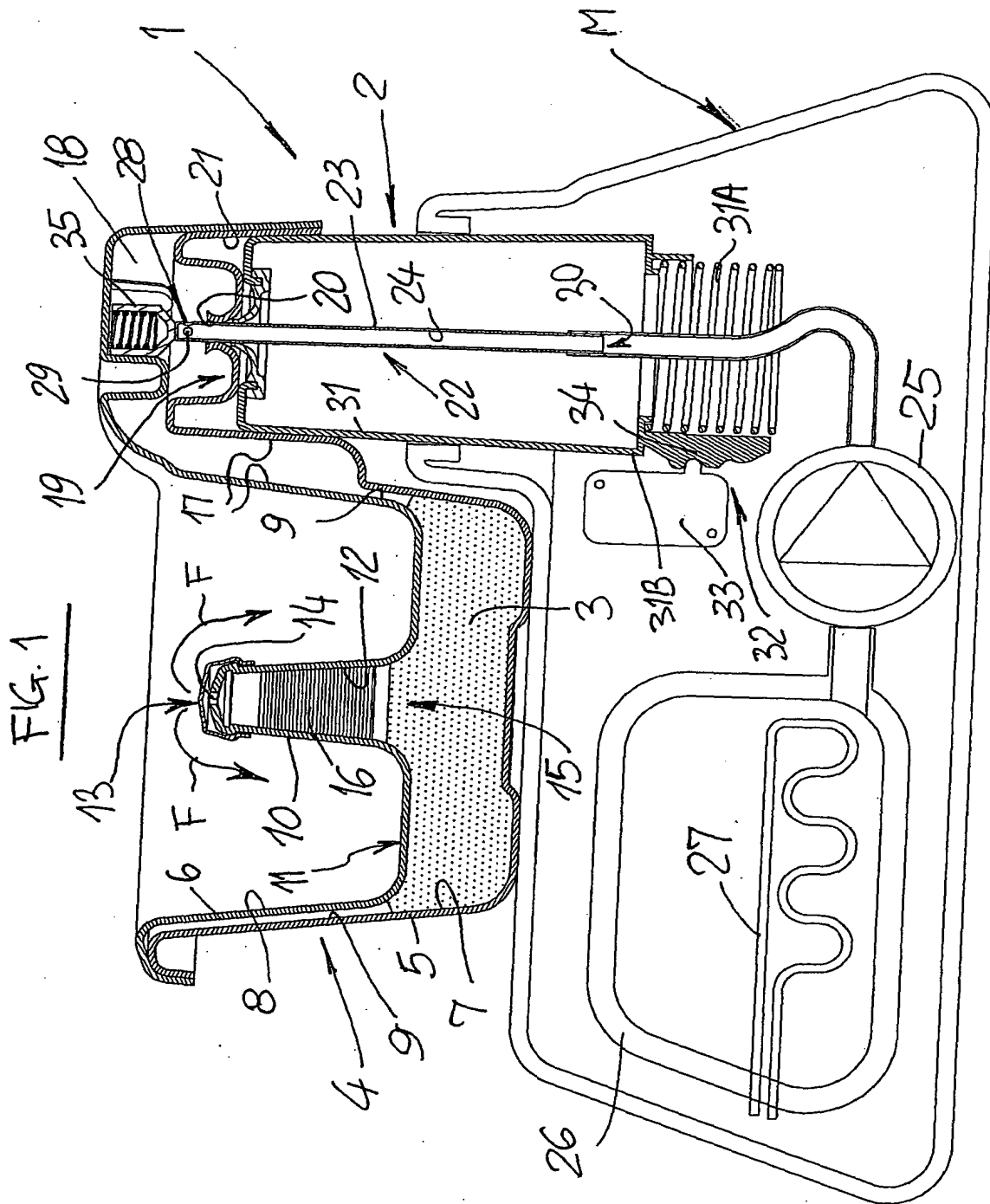
63) for the introduction of a solvent liquid dispensed by a dispensing device (2); a second collection compartment (8; 52; 64) of a dissolved drink, open and accessible from the outside, defined in said containment body (4; 50; 60) separately from said first compartment (7; 51; 63) and connectable to this by connection means (10; 55; 65), said second compartment (8; 52; 64) allowing a user to drink said dissolved drink directly from said container (4; 50; 60).

16) Container according to claim 15, wherein said containment body (4; 50; 60) comprises coupling means (19) with said dispensing device (2), in such a way as to receive said solvent liquid when said coupling means (19) couple with said dispensing device (2).

17) Container according to claim 16, wherein said coupling means comprise a coupling opening (20) normally closed with laminar perforable means; a concave seat (21) defined around said coupling opening (20) and meant to receive a corresponding perforating (23) and dispensing element of said dispensing device (2).

18) Method for producing and consuming soluble drinks, comprising the following phases: arranging in a first compartment (7; 51; 63) of a container (4; 50; 60) a dose of powdered soluble drink (3; 58); introducing into said first compartment (7; 51; 63) a solvent liquid in such a way as to dissolve inside this said dose (3; 58) and obtain a dissolved drink ready to drink; dispensing said dissolved drink; characterized by the fact that after said dispensing the collection is envisaged of said dissolved and dispensed drink in a second compartment (8; 52; 64) of said container (4; 50; 60), separated from said first compartment (7; 51; 63) and accessible from the outside, in such a way as to be able

to drink said dissolved drink directly from said second compartment (8; 52; 64).



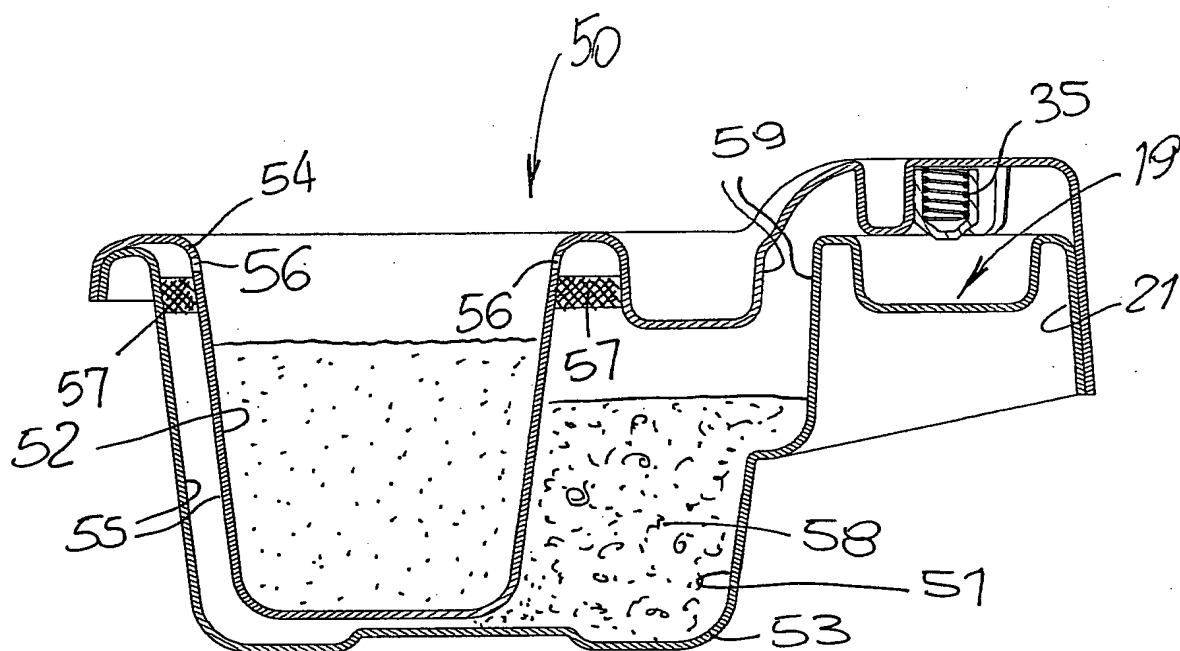


FIG. 2

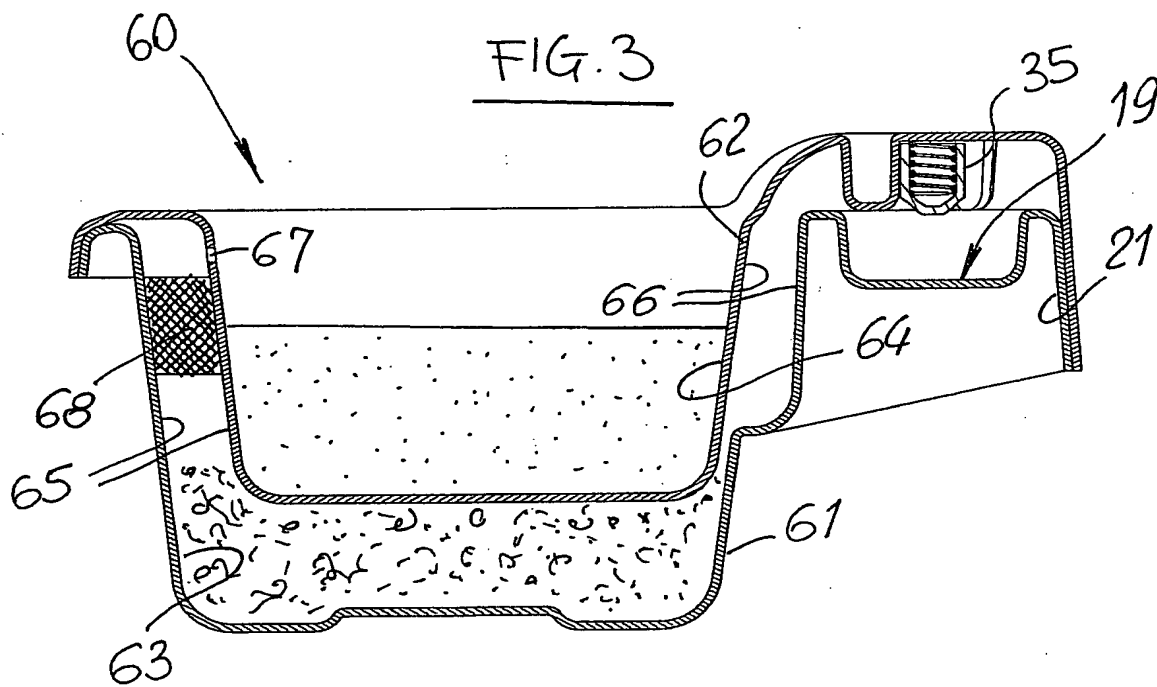
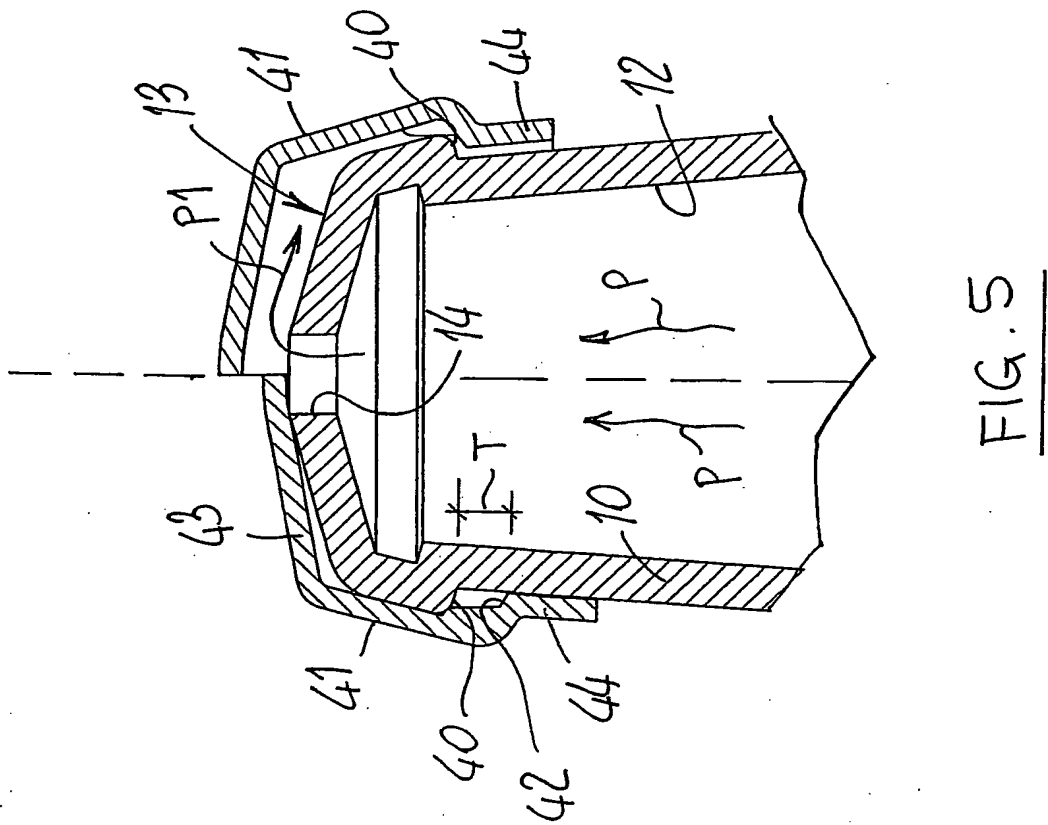
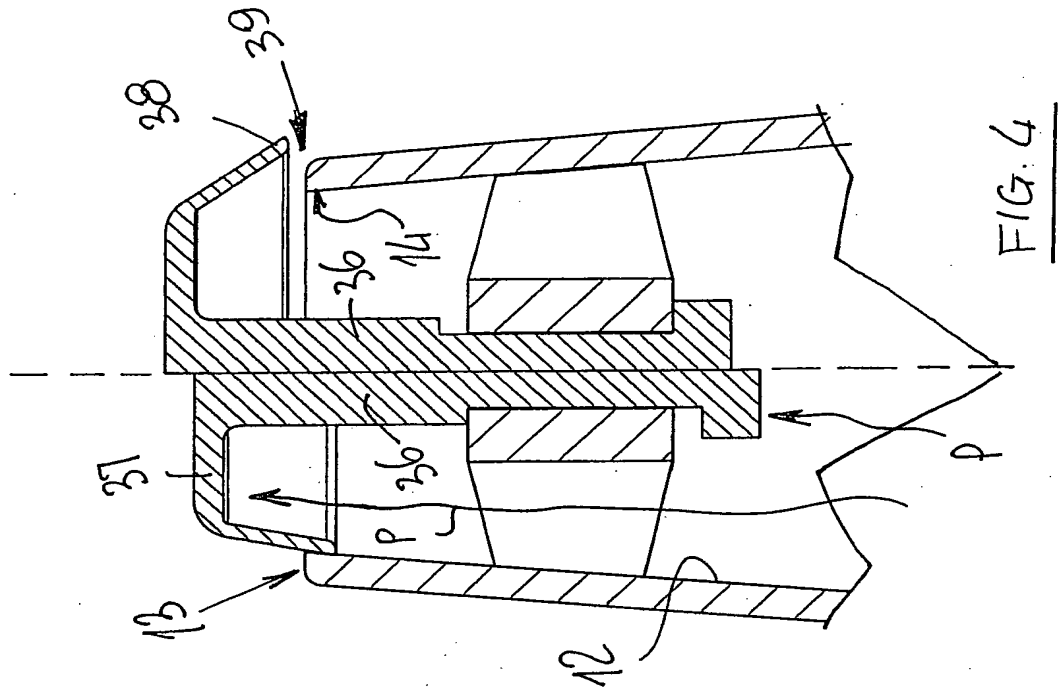


FIG. 3



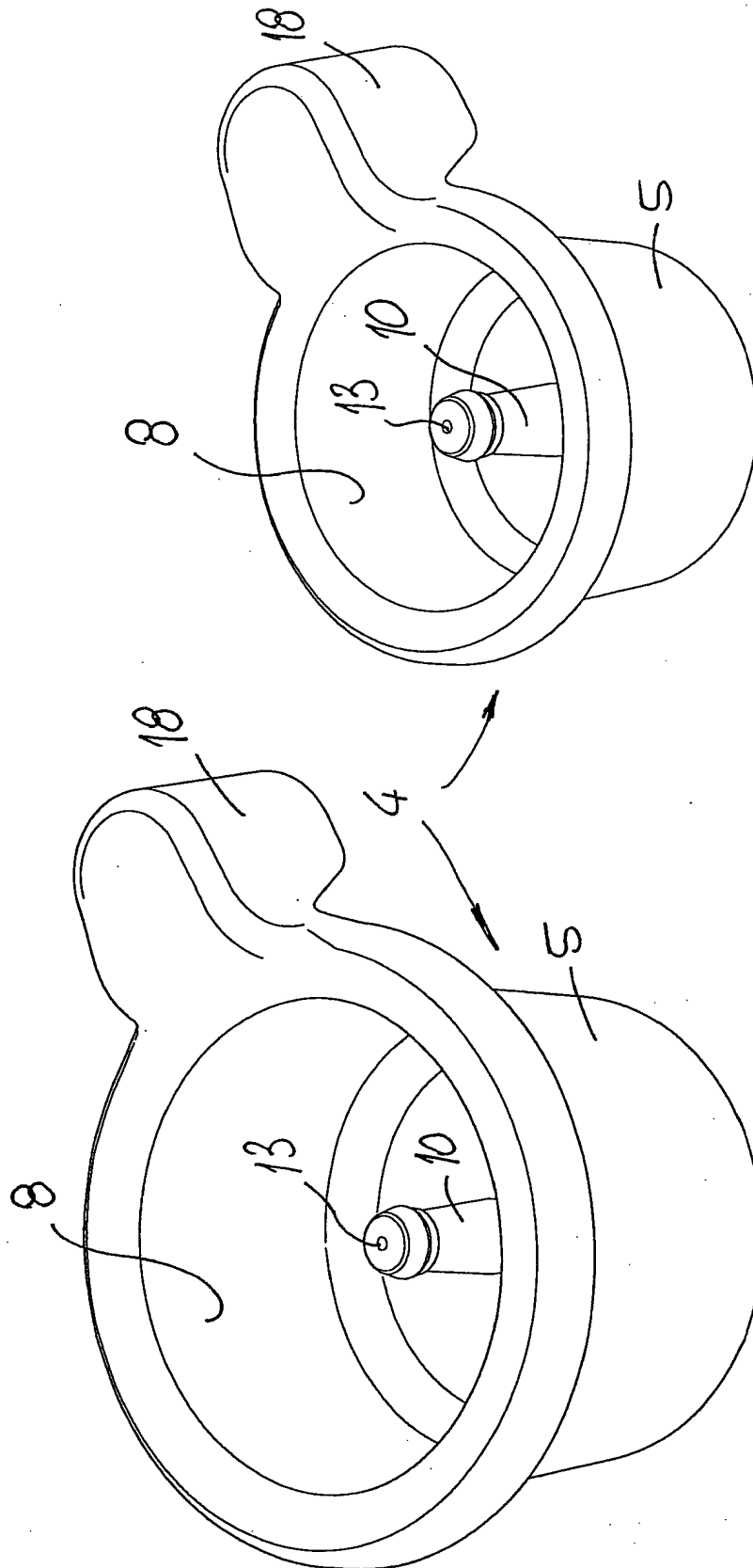


FIG. 6A

FIG. 6B

# INTERNATIONAL SEARCH REPORT

International application No  
PCT/IB2008/001233

**A. CLASSIFICATION OF SUBJECT MATTER**  
INV. B65D85/804 A47J31/36

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
B65D A47J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)  
EPO-Internal, WPI Data, PAJ

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 20 47 407 A1 (SCHWEIM THORA) 30 March 1972 (1972-03-30) figure 1	1, 15, 18
A	WO 2004/087529 A (HAUSBRANDT TRIESTE 1892 SPA [IT]; ZANETTI MARTINO [IT]) 14 October 2004 (2004-10-14) cited in the application	1-18

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

\* Special categories of cited documents:

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- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
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Date of the actual completion of the international search

26 September 2008

Date of mailing of the international search report

03/11/2008

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2008/001233

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